

In re Patent Application of:
VIGIL ET AL.
Serial No. 09/840,481
Filing Date: April 23, 2001

In the Claims:

Claims 1-24 (Cancelled).

25. (Currently Amendment) A method for mitigating multipath in a digital television signal (DTV) that is ATSC DTV compliant, the method comprising:

generating a training sequence that is ATSC DTV compliant;

multiplexing the training sequence reference data with DTV data to generate a multiplexed DTV data stream with the training sequence embedded therein;

modulating the multiplexed DTV data stream for transmission;

receiving a transmitted DTV signal;

detecting correlation peaks in the received DTV signal based upon the multiplexed reference data, training sequence embedded therein; and

using the detected correlation peaks to mitigate multipath in the received DTV signal.

Claims 26-27 (Cancelled).

28. (Previously Presented) A method according to Claim 25 wherein the training sequence reference data is based upon a priori knowledge of the DTV data.

29. (Previously Presented) A method according to Claim 28 wherein the a priori knowledge includes modulation characteristics of the DTV data.

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30. (Previously Presented) A method according to Claim 29 further comprising estimating the modulation characteristics of the DTV data.

31. (Currently Amended) A method for mitigating multipath in a digital television signal (DTV) that is ATSC DTV compliant, the method comprising:

estimating modulation characteristics of DTV data to be transmitted;

generating a training sequence that is ATSC DTV compliant and is determining reference data based upon the estimated modulation characteristics of the DTV data;

multiplexing the training sequence reference data with the DTV data to generate a multiplexed DTV data stream with the training sequence embedded therein; and

modulating the multiplexed DTV data stream for transmission.

32. (Currently Amended) A method according to Claim 31 further comprising:

receiving a transmitted DTV signal;

detecting correlation peaks in the received DTV signal based upon the multiplexed reference data, training sequence embedded therein; and

using the detected correlation peaks to mitigate multipath in the received DTV signal.

Claims 33-34 (Cancelled).

35. (Currently Amended) A digital television

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(DTV) system comprising:

a transmitting system comprising

a circuit for generating a training sequence
that is ATSC DTV compliant,

a multiplexer for multiplexing the training
~~reference data~~ with DTV data that is ATSC
DTV compliant to generate a multiplexed DTV data
stream with the training sequence embedded therein,

a modulator connected to said multiplexer for
modulating the multiplexed DTV data stream, and

a transmitter connected to said modulator for
transmitting a DTV signal based upon the multiplexed
DTV data stream; and

a receiving system for receiving the transmitted DTV
signal and comprising a correlator for detecting correlation
peaks in the received DTV signal based upon the multiplexed
~~reference data;~~ training sequence embedded therein, and using
the detected correlation peaks to mitigate multipath in the
received DTV signal.

Claims 36-37 (Cancelled).

38. (Currently Amended) A DTV system according to
Claim 35 wherein the training sequence ~~reference data~~ is based
upon a priori knowledge of the DTV data.

39. (Previously Presented) A DTV system according to
Claim 38 wherein the a priori knowledge includes modulation
characteristics of the DTV data.

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40. (Previously Presented) A DTV system according to Claim 39 wherein said multiplexer comprises an estimator for estimating the modulation characteristics of the DTV data.

41. (Previously Presented) A DTV system according to Claim 35 wherein said receiving system comprises a digital television.

42. (Currently Amended) A digital television (DTV) comprising:

an input for receiving a transmitted DTV signal that is ATSC DTV compliant and comprising reference data and a multiplexed DTV data stream with a training sequence embedded therein; that was multiplexed before being modulated for transmission; and

a correlator for detecting correlation peaks in the received DTV signal based upon the multiplexed reference data, training sequence embedded therein, and using the detected correlation peaks to mitigate multipath in the received DTV signal.

43. (Previously Presented) A DTV according to Claim 42 further comprising a demodulator connected to said correlator for demodulating the received DTV signal.

Claims 44-45 (Cancelled).

46. (Currently Amended) A DTV according to Claim 42 wherein the reference data training sequence is based upon a priori knowledge of the DTV data.

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47. (Previously Presented) A DTV according to Claim 46 wherein the a priori knowledge includes modulation characteristics of the DTV data.